



Conference Notes

“The Future Ain’t What it Used to Be: Planning for Climate Disruption”

Summary of Agriculture Breakout Session

October 27, 2005

Qwest Field Conference Center

Seattle, Washington

Sponsored by King County

Report prepared by Joe Casola

Information on the conference is available at:
<http://metrokc.gov/climateconference2005>

Agriculture Session Steering Committee

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“The Future Ain’t What it Used to Be: Planning for Climate Disruption”
October 27, 2005
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Summary of Agriculture Breakout Session

On Thursday, October 27, 2005, King County hosted a one day meeting to engage a broad cross-section of Washington State governments, businesses, tribes, farmers, non-profits, and the community-at-large in a dialogue about climate change impacts and potential adaptations in Washington State. The following is a summary of the Agriculture breakout group presentations and discussion. More information on the meeting, including electronic copies of the breakout group presentations, is available at <http://metrokc.gov/climateconference2005>.

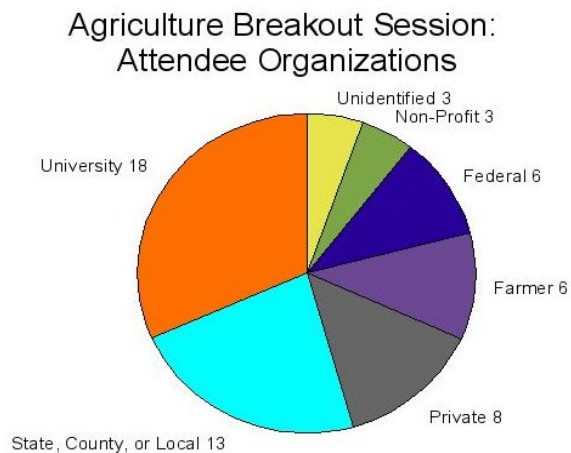
The Agriculture breakout session included presentations and panel discussions.

The Agriculture breakout session identified the following three items as priorities in its afternoon report to the plenary:

- Climate change poses challenges to the quantity and quality of farmers' water supplies.
- Climate change will likely increase the threat caused by agricultural pests. New or different pests in the region as well as changes in the lifecycle of current pests could require changes to farming practices.
- A regional agricultural strategy is necessary to address climate impacts as well as the current economic difficulties of farming in the Pacific Northwest. This strategy ought to encourage investment in agricultural operations, bolster communication between researchers and farmers, improve funding for extension activities, address rising production and fuel costs, and take advantage of potential biofuel production opportunities.

Participants

The Agriculture breakout group attracted 57 participants. The number of attendees from universities (including university agriculture extension services); state, county, or local governments; private firms; farming operations; federal agencies; and non-profit organizations are shown in the pie chart at right.



Summary of Morning Session

Presentations

Chris Feise of the Washington State University (WSU) Center for Sustaining Agriculture and Natural Resources provided an introduction and explained the format of the breakout sessions.

Dr. Michael Scott, "Impact of Water Availability on Washington Agriculture in a Changing Climate." Presentation available on as a pdf at <http://metrokc.gov/climateconference2005>.

Question and Answer Summary

Question: How does the crop response differ for the different seasons? Could crops benefit from climate change during the winter, but suffer during the summer?

Dr. Scott: Yes, crops could benefit from higher temperatures during the winter, but suffer during the summer. The highest risk to crops will likely be during the late summer.

Question: How could climate change affect supply, demand, and crop prices?

Dr. Scott: Wheat prices, for example, are determined by the international market. It's difficult to forecast how prices could be affected, as it is difficult to know how climate change could affect all the wheat-producing areas across the globe.

Question: Does your analysis consider how winter wheat would respond to a lack of snowcover?

Dr. Scott: Refers the answer to his colleague Dr. Claudio Stoeckle.

Dr. Stoeckle: That has not been examined in detail. It is more complex.

Question: How do Celsius and Fahrenheit temperature increases compare? Can a 2°C increase in temperature [shown in many of the presentation charts] be considered to occur around 2040?

Dr. Scott: A temperature increase of 2°F is approximately equal to 1°C. And yes, the increase of 2°C is projected to occur around 2040. The impacts for dry-land agriculture can be thought of in a linear manner – an increase of 1°C will have an impact somewhere between the current climate and the impact projected for a 2°C increase. This linearity breaks down for irrigated agriculture, however.

Dr. Stella Coakley, "Potential Impacts of Climate Change on Pacific Northwest Agricultural Diseases and Pests." Presentation available on as a pdf at <http://metrokc.gov/climateconference2005>.

Question and Answer Summary

Question: Are organic farm operations also subject to the same types of pest threats?

Dr. Coakley: Organic agriculture can also be attacked by the same pests. It is important to keep the host material clean and to clean and inspect seeds. I forgot to mention that diseases and pests pose a bigger risk to perennial crops than to annuals, since the recovery time is longer. When assessing risk, it is also important to understand the microclimate of your farm, to know where diseases or pests might be able to survive or thrive.

Dr. Greg Jones, "Potential Impacts of Climate Change on Viticulture and Grape Varieties in Washington State" Presentation available on as a pdf at <http://metrokc.gov/climateconference2005>.

Question and Answer Summary

Question: How might climate change affect the occurrence of arctic blasts in Eastern Washington?

Dr. Jones: It is difficult to say, as many factors such as the El Niño Southern Oscillation, the Pacific Decadal Oscillation, and the Arctic Oscillation affect the frequency of these extreme

events. However, knowledge of the phase of these patterns may provide some seasonal forecast skill at a 6 month lead time. This will be the subject of a talk that I will be giving in January.

Panel Discussion

Moderator: Chris Feise, Director, Washington State University Center for Sustaining Agriculture and Natural Resources

Panelists: Dr. Michael Scott, Staff Scientist, Pacific Northwest National Laboratory; Dr. Stella Coakley, Professor, Department of Botany and Plant Pathology, Oregon State University; Dr. Greg Jones, Associate Professor of Geography, Southern Oregon University

Purpose and Structure of the Discussion

During the last 15 minutes of the morning session, attendees were given the opportunity to raise issues for all of the presenters to consider. The format was question and answer.

Question and Answer Summary

Question: As climate changes, how do invasive species change? In the future, will we face things that aren't here currently?

Dr. Coakley: We need to monitor what types of species are here very closely. The ability to model pathogens is limited. The best information is currently available for high value crops where specific risks are known, as is the case for potato leek blight. The decline in farm surveys poses a risk to recognizing the appearance of a new pest or pathogen. However, since September 11, 2001, some monitoring programs have received more resources with the demands for heightened agricultural security for the nation. Overall, we need to maintain vigilance.

Dr. Jones: The amount and quality of observations is deficient. Often farmers do not attribute what they observe to an outside factor [such as a new pest or pathogen]. The communication network among farmers is sub-standard. It seems worse in the U.S than in Europe and other countries.

Dr. Coakley: Cooperation and communication among farmers regarding these types of observation seems better in the Eastern portion of the country than in the Western portion.

Summary of Afternoon Session

Presentations

Karl Kupers, a wheat and alternative crop farmer from Lincoln County, made a presentation to begin the afternoon session.

Mr. Kupers focused on the opportunity for Pacific Northwest farmers to produce crops for biofuels and other non-food products. He claims that rises in fuel costs, reductions in rural incomes, increases in population, environmental degradation, and water scarcity have combined to force many of the region's farmers to "walk off the land." The economic hardships involved with farming make explicit preparation for climate change of secondary importance.

Mr. Kupers encouraged attendees to push for an state-wide or regional agricultural strategy that can help address some of these economic issues. Through such a strategy, farmers could take advantage of opportunities for growing crops for biofuels. A key component of the agricultural strategy would include a renewable fuel standard, which would mandate the time-table for increasing the percentage of energy from renewable sources. He referred attendees to the draft legislation available from Climate Solutions (www.climatesolutions.org)

Following Mr. Kupers's presentation, a brief discussion ensued regarding the efficiency of biofuels and the availability of technologies to produce fuels and other products from crops. Mr. Kupers (along with Chad Kruger, WSU Extension) assured the audience that:

- Biofuels could be produced efficiently with regard to the energy input;
- Seed products and crushed meal could be sources for fuel and products;
- Use of biofuels could reduce greenhouse gas emissions significantly; and,
- WSU, the Washington State Department of Agriculture (WSDA), and the Washington State Department of Community, Trade, and Economic Development (CTED) are engaged in research on digesters, fuel plants, and fuel extraction by-products.

Panel Discussion

Moderator: Kathy Hashagen, Project/Program Manager, King County Solid Waste Division

Panelists: Michelle Blakely, a farmer from the Snoqualmie Valley; Bob Tidball, a farmer from the Kent Valley, and a member of the King County Agriculture Commission; Alec McErlich, a specialist in large-scale organic agriculture from Small Planet Foods/General Mills; Karl Kupers a wheat and alternative crop farmer from Lincoln County.

Purpose and Structure of the Discussion

The purpose of the panel discussion was to address the following questions:

What are the climate challenges to agriculture that are most important to address?

What additional information is needed to assess vulnerabilities and mitigating actions?
When is it needed? Who should do so? What are the opportunities for ongoing collaboration?

Although panelists were present, the discussion was shared by the entire group – panelists were generally not questioned directly.

Discussion Summary

Challenges to Washington Farmers

- Climate change could increase the frequency of occurrence of drought and make water less available. The scarcity of water is exacerbated by inequitable or inefficient water management and consumption practices, rigid laws governing water rights, and a growing dependence on irrigation.
- Drought announcements can sometimes have negative consequences. Nurseries suffered this past year, as consumers were reluctant to plant flowers even though the spring rains may have provided sufficient water.

- Climate change could heighten the threat posed by pests.
- Alteration to the timing of the seasons could require changes in farming practices.
- Currently, it is not very profitable to farm in Washington State. The dire economic situation often prohibits re-investment “to the land,” inhibiting farmers ability to adapt to challenges such as those projected for climate impacts.

Information Needs

- It is not clear how climate change could impact the many aspects of food production other than crop yield, such as food quality and costs of processing and marketing.
- The special risk and planning options for farmers raising perennial crops are not fully understood. Blueberries, which can be a 75-year crop, were given as an example.
- More communication is needed between farmers and researchers to help identify problems, including those associated with climate impacts, and to suggest solutions.

Recommendations and Opportunities

- Increase water storage and delivery systems. improve and/or implement practices and technologies that can conserve water used for irrigation.
- Increase funding and resources for extension activities. Improve communication between researchers and farmers, and among farmers.
- Raise consumer awareness of where food is produced. Suggestions included improving signs near fields and adopting a branding program similar to Energy Star or the Food Alliance.
- Market-based approaches are preferable to regulations.
- Take advantage of opportunities for producing biofuels from crops.
- An overall, integrated strategy is needed – no single solution or “silver bullet” exists.

Summary of Report to Plenary

Chris Feise, the moderator of the Morning Panel Discussion, reported the results of the Agriculture Breakout sessions during the afternoon plenary session. His report included many of the items discussed during both the Morning and Afternoon Sessions. The three top priorities for the agriculture sector were:

- Climate change poses challenges to the quantity and quality of farmers' water supplies.
- Climate change will likely increase the threat caused by agricultural pests. New or different pests in the region as well as changes in the lifecycle of current pests could require changes to farming practices.
- A regional agricultural strategy is necessary to address climate impacts as well as the current economic difficulties of farming in the Pacific Northwest. This strategy ought to encourage investment in agricultural operations, bolster communication between researchers and farmers, improve funding for extension activities, address rising production and fuel costs, and take advantage of potential biofuel production opportunities.